REMARKS

An English language translation of JP 59-36550 that was cited by the Japanese Patent Office on the corresponding Japanese patent application is believed to have been submitted on May 20, 2010. To ensure that it is part of the record, it is submitted herewith with an accompanying Information Disclosure Statement.

The independent claims have been amended to address the Examiner's indefiniteness objections raised in the Office Action, and similar amendments to other features in independent Claim 1 have been made.

In response to the Examiner's anticipation and obviousness rejections, we have introduced the features of former dependent Claim 15 into independent Claim 1. We submit that this amendment distinguishes the independent claim over the prior art that has been cited, and also over the English language translation of the Japanese document that is attached, as discussed in more detail below.

Dependent Claim 10 has been amended, as discussed below.

Distinction over the prior art cited and applied

The Examiner indicates that former Claim 15 is obvious in light of Yoshikawa et al and

Tanaka et al. Claim 15 introduces the feature that the conductive medium has a resistivity in the range of 100 ohms per square to 10,000,000 ohms per square. The Examiner asserts that Tanaka et al discloses a conductive medium with a resistivity that is in the range defined by former dependent Claim 15, and therefore that it would have been obvious to a person skilled in the art to combine the teachings of Yoshikawa et al and Tanaka et al in order to improve accuracy of a pointing object detection. We respectfully disagree.

The present application relates to capacitive touchpads. Yoshikawa et al relates to a digitizing tablet that employs capacitive coupling whereas Tanaka et al relates to resistance film touch panels. Tanaka et al has no relevance to capacitive touchpads.

With regard to the Examiner's objection to former dependent Claim 15, the Examiner appears to rely on the "transparent conductive film" that is described in paragraph [0320] of Tanaka et al as having a resistivity in the range that is defined by dependent Claim 15. The "transparent conductive film" of Tanaka et al is one of two transparent conductive films that are brought into contact with each other such that the resistance at this point [of contact] is detected, thereby detecting the contact site (paragraph [0003]). The transparent conductive films (2) are also shown in Figure 1, and described in paragraph [0024]. As clearly indicated in paragraph [0003], the touch panel of Tanaka et al is a resistance film touch panel.

In light of the above, the "transparent conductive film" of Tanaka et al in combination

with Yoshikawa et al cannot be considered relevant to the patentability of the present application. There is no motivation for a person having ordinary skill in the art to introduce a conductive medium of any sort, let alone a conductive medium having a resistivity in the range of 100 ohms per square to 10,000,000 per square, to the digitizing tablet of Yoshikawa et al such that the claimed subject matter would be anticipated. The skilled person would have no expectation that the introduction of a "transparent conductive film" from a resistance film touch panel into the digitizing tablet of Yoshikawa et al (which is used to control the vibration of an operation panel) would provide an improved capacitive touchpad as defined by the amended independent claim of the present application.

Of course, conductive media with a resistivity in the range of 100 ohms per square to 10,000,000 per square are known, and this is all that Tanaka et al discloses. Tanaka et al does not disclose any conductive medium that the skilled person would understand to be representative of a teaching that a conductive medium could be used as part of a capacitive touchpad to locally modify a capacitive environment. Such issues are simply not considered by Tanaka et al, nor are they considered by Yoshikawa et al. The Tanaka et al prior art document has been cherry-picked as an allegedly relevant prior art document on the basis that it has a conductive layer with a resistivity that is in the range of that defined by former dependent Claim 15. No reasons have been put forward as to why it would be obvious for a person having ordinary skill in the art to consider the disclosure of Tanaka et al as teaching that the introduction of the conductive medium of Tanaka et al to the tablet of Yoshikawa et al would be obvious.

Further still, even if the person having ordinary skill in the art were to combine the teachings of Yoshikawa et al and Tanaka et al, all of the features of the "conductive medium" are still not disclosed. The Examiner submits that the column electrodes (6) of Yoshikawa et al are relevant to the "conductive medium" of the present application. We respectfully disagree. The column electrodes (6) of Yoshikawa et al, as indicated in paragraphs [0055] and [0056] extend in an X direction. This is in contrast to the row electrodes (7) of Yoshikawa et al that extend in the Y direction. Therefore, neither of these sets of electrodes can be considered to concentrate an electric field towards a plane of a supporting medium, as required by the independent claims of the present application. Each set of electrodes extends in just one direction. In fact, if either of the sets of electrodes were arranged to concentrate an electric field towards the plane of a supporting medium, and not in only an X or Y direction, then the capacitive touch sensor would not be able to identify the location of a touch.

For the above reasons, we submit that the amended claims are novel and inventive over the prior art that has been cited.

If objections to the new independent Claim 1 on the basis of Yoshikawa et al and Tanaka et al, are considered by the Examiner, we respectfully request that the reasons why the claim is considered to be obvious be identified. We request that the reasons include an indication of the alleged motivation for a person having ordinary skill in the art to combine the teachings of

Yoshikawa et al and Tanaka et al. Also, we request an indication of why the person having ordinary skill in the art would have an expectation that taking a "transparent conductive film" from a resistance film touch panel (as in Tanaka et al), and incorporating such a film into a digitizing tablet that can control the vibration of an operation panel (as disclosed in Yoshikawa et al) would give rise to the subject matter as defined by the amended independent claims.

Distinction over Japanese prior art

With regards to the English language translation of JP 59-36550 (JP '550), we offer the following comments that have been submitted to the Japanese Patent Office in relation to the corresponding Japanese patent application.

JP '550 relates to a system that can account for variations in the touch sensitivity of capacitive keypads that are caused by some operators having dry fingers, while other operators have moist fingers. This can be overcome by providing a moist top coating to the keypad (hygroscopic thin-film 8). The hygroscopic thin-film 8 absorbs water from the atmosphere such that there is a reduced difference in operation of the keypad with wet and dry fingers. In particular, the moisture provides an improved coupling between the finger and the glass, and thereby provides a stronger grounding of the capacitance detection signal over the finger contact area. The disclosure of JP '550 can be considered as ensuring that everyone who operates a keypad effectively has a moist finger contact.

JP '550 indicates that the moisture-absorbing thin film surface has a resistivity of around 10^8 to 10^{10} Ω cm. Consequently, even if the fingertip of the person touching the panel is dry, the area of contact between fingertip and panel surface is increased and the body capacitance is effectively applied.

We submit that this is different to the claimed invention, which requires an electrically conductive medium... to concentrate electric field between conductors... and locally modify the capacitive environment between a subset of the conductors, wherein the conductive medium has a resistivity in the range of 100 Ohms per square to 10,000,000 Ohms per square.

JP '550 describes a moisture-absorbing thin film surface having a resistivity of around 10^8 to 10^{10} Ω cm, and therefore independent Claim 1 is novel over JP '550.

With regard to the inventiveness of Claim 1, we submit that the skilled person would appreciate that the moisture-absorbing thin film of JP '550 cannot functionally operate to locally modify the capacitive environment between a subset of the conductors as its resistivity is too high. The overall teachings of JP '550 involve providing a layer of moisture between a finger and the keypad so that there are no differences between the detection of a wet and a dry finger. In contrast, the present application relates to the provision of a conductive medium/surface, which makes even a small area that is contacted by a finger to be of much wider diameter than it really is. The teachings of the present application indicate that the lower the resistance of the

conductive layer, the larger the finger contact diameter appears to be.

For the above reasons, we submit that the skilled person would not adapt the teachings of JP '550 in order to use a conductive medium with a resistivity in the range of 100 to 10,000,000 (10^2 to 10^7) Ω cm as required by the independent claim. The skilled person would appreciate that amending the resistivity of the surface in JP '550 to a value that is covered by the amended independent claim would not address the problem of removing any differences between a wet and a dry finger, which is the problem that is addressed by JP '550.

In addition to the arguments provided above in relation to the independent claim, we also indentify a significant difference between dependent Claim 10 of the present application and the teachings of JP '550.

Dependent Claim 10 relates to a non-conductive layer proximate to the conductive layer. An embodiment that illustrates this feature is shown as Figure 6, and described on page 13 of the published PCT application. We are proposing an amendment to dependent Claim 10 such that the claim clarifies that the non-conductive layer is configured to prevent direct user contact with the conductive layer, and support for this amendment can be found at page 13, lines 1 to 3 of the published PCT application.

We submit that the skilled person would not be taught to amend the teachings of JP '550

to provide a non-conductive layer to prevent direct user contact with the conductive layer, as doing so would defeat the object of JP '550. That is, JP '550 provides a keypad whereby the user's finger must directly contact the hygroscopic thin-film layer in order to provide a layer of moisture between the user's finger and the keypad. If a non-conductive layer were provided to prevent direct user contact with the hygroscopic layer, as defined by amended Claim 10, then the system of JP '550 would simply not work.

For the above reasons, we also submit that Claim 10 defines patentable subject matter.

Respectfully submitted,

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